

ABSTRACT OF THE DISCLOSURE

A method for manufacturing a semiconductor device by bonding a first metal bump formed on a first semiconductor substrate and a second metal bump formed on a second semiconductor substrate together. This method includes a low melting point metal layer forming step for forming a layer of a low melting point metal on a top portion of at least either of the first metal bump and the second metal bump, a substrate temperature controlling step for controlling, with the first semiconductor substrate and the second semiconductor substrate being separated from each other, the temperature of the first semiconductor substrate to a first temperature higher than the solidus temperature of the low melting point metal and controlling the temperature of the second semiconductor substrate to a second temperature lower than the solidus temperature of the low melting point metal, a metal bump approaching step for bringing the first metal bump and second metal bump close to each other after the substrate temperature controlling step, and a step for controlling, after the metal bump approaching step, the temperatures of the first semiconductor substrate and the second semiconductor substrate to a temperature lower than the solidus temperature of the low melting point metal.